



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,850	06/27/2005	Alexander Hofmann	HOFMANN10	2360

1444 7590 10/10/2007
BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER

CHIMIAK, EMILY ANN

ART UNIT	PAPER NUMBER
----------	--------------

1791

MAIL DATE	DELIVERY MODE
-----------	---------------

10/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,850	Applicant(s) HOFMANN ET AL.	
	Examiner Emily Chimiak	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-33 is/are pending in the application.
- 4a) Of the above claim(s) 21 and 25-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-20 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 17-20 and 22-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/27/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claim(s) 17-24, drawn to a method.

Group II, claim(s) 25-33, drawn to an apparatus.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The technical feature is old in the art. Holmes et al. (US 6451152) discloses a method of welding thermoplastic substrates (resin tape T and layers of tape upon substrate S) using laser diodes wherein some of the laser diodes emit electromagnetic secondary radiation wherein the radiation is applied in the area of a clamping device 24 (Figures 11-13; col. 11 lines 5-67).

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

4. During a telephone conversation with Mr. Browdy on 09/17/2007 a provisional election was made with traverse to prosecute the invention of the method, claims 17-20 and 22-24.

Art Unit: 1733

Affirmation of this election must be made by applicant in replying to this Office action. Claims 21 and 25-33 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 17-20 and 22-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As to claim 17, there is lack of antecedent basis for the “the area of joining” in lines 6-7 and “the welding area” in line 9. As to claim 22, the phrase “led ahead” (claim 22 line 2) renders the claim indefinite because the direction ‘ahead’ is not specified in the disclosure. For the purpose of examination, the phrase ‘led ahead’ is considered to read on ‘led ahead or behind.’

Claim Objections

7. Claims 17-20 and 22-24 are objected to because of the following informalities: the phrase “that is to welded (claim 17 line 5) is thought to be a mistype where the phrase “that is to be welded” is intended. Similarly, the phrase “welding area homogenized” (claim 17 line 15) is thought to be a mistype where the phrase “welding area is homogenized” is intended.


Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 17-20 and 22-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Holmes et al. (US 6451152).

As to claim 17, Holmes et al. discloses a method of welding a tape T  (corresponding To join partner 1 of applicant's disclosure) to the previously laid tape upon the surface of substrate 32 that corresponds to join partner 2 of applicant's disclosure (col. 8 lines 10-17), in particular steering a tape along a curved path on a surface that is convex (col. 11 lines 43-45), i.e. the contour-welding of three dimensional molded articles, comprising the following features:

- Moving join partners into contact in the vicinity of an outline that is to be welded (col. 5 lines 37-41)
- Acting on the join partners in the area of joining by a clamping device 24 (col. 5 line 47)
- Exposing one of the join partners (the substrate) to radiation in the welding area by laser welding beams emitted by some of the laser diodes 40 comprising laser diode array 20 (Figure 3; col. 6, line 44-col. 8 line 17); and

Art Unit: 1733

- Additionally and simultaneously exposing the other join partner in the welding area to laser welding beams emitted by other laser diodes 40 comprising laser diode array 20 (other laser diodes 40 equated to Applicant's electromagnetic secondary radiation) for selective temperature increase thereof such that the temperature field in the welding area is homogenized (Figures 11-13; col. 11 lines 5-67).

As to claim 18, Holmes et al. teaches that the secondary radiation comprises at least beam fractions that deviate from the wavelength of the laser welding beam (see rejection above).

As to claims 19 and 20, because the invention of applicant and Holmes et al. is to optimize the heating of the tape and substrate at all times such that the temperature of both the tape and substrate is raised to become sufficiently plastic to flow and produce a good bond (col. 8 lines 10-14 and col. 11 lines 31-35 of Holmes et al. and [0013] of applicants disclosure from patent number 2006/0144509), it would have been well within the purview of one of ordinary skill in the art at the time of invention to test different secondary radiation wavelengths based on the materials comprising the join partners.

As to claim 22, the wavelength is varied along the direction of travel of the tape in one embodiment, i.e. the secondary radiation is being led ahead or behind of the laser welding beam (col. 11 lines 32-37 and lines 59-60).

As to claim 23, the laser diodes, including the secondary radiation, is focused in one embodiment (col. 6 lines 65-67).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1733

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holmes et al. as applied to claim 17 above, and further in view of Chen et al. (see the machine translation of EP1405713).

It is unclear whether Holmes et al. discloses at least one of the secondary radiation and the laser welding beam being applied by a clamping device that is transmissive thereto.

However, Chen et al. teaches that it is advantageous in the art of connecting workpieces form plastic using a laser source to focus the laser radiation through a swiveling ball that applies pressure to the welding area in order to adjust the beam to provide precise welding and pressing using the same working head (see [0001] and [0008] of the machine translation of EP1405713).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the pressure roller 24 disclosed by Holmes et al. in order to guide the laser diode array in order to control welding temperature and pressure using one working head.

Art Unit: 1733

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Chimiak whose telephone number is (571)272-6486. The examiner can normally be reached on Monday-Friday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)272-6486. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



EAC

JESSICA WARD
PRIMARY EXAMINER

